RIVERS AND FLOODS

By R. E. SPENCER

Except for moderate losses resulting from the rises in the Alabama and Tombigbee systems, floods during March were without important consequence.

In his discussion of the flood in the Tombigbee system, the official in charge of the Weather Bureau office at Mobile, Ala., refers to the unusual rapidity of the rise in the Black Warrior River at Tuscaloosa, Ala.:

The stage at this station at 8 a. m. on March 6 was 12.3 feet, and at the same hour on March 7 it was 48.1 feet—a 24-hour rise of 35.8 feet, which is unprecedented since the establishment of the station. It was ascertained from the river observer that the stage at 7 p. m. March 6 was about 13 feet, which makes a rise of approximately 35 feet in 13 hours.

Relative to the effects of this flood, Mr. Ashenberger's report continues:

Only the lowest river bottoms of the Tombigbee from near Demopolis to its confluence with the Alabama and of the Black Warrior from its mouth to some distance above Tuscaloosa were inundated. Reports from correspondents give the aggregate monetary value of property losses as follows:

Tangible property	$21,800
Matured crops	2,000
Prospective crops (5,000 acres)	50,000
Livestock and other movable property	1,900
Suspension of business	38,000

The aggregate of the monetary value of property saved by Weather Bureau warnings is $46,500.

The Alabama system flood, resulting from somewhat unevenly distributed rains on March 6–7 over the Coosa, upper Alabama, and tributary streams, did comparatively little damage:

Tangible property (largely roads)	$3,000
Matured crops	6,100
Prospective crops (700 acres, mostly corn)	4,000
Livestock	2,300
Suspension of business	16,100

A saving of $3,000 was reported through the use of Weather Bureau warnings, in addition to which a considerable unreported saving in livestock was effected.

A loss of about $2,500 was the result of an overflow of lowlands, caused by an ice gorge which formed on the night of March 5–6 in the Missouri River just below Vermilion, S. Dak., at the junction of the Vermilion and Missouri Rivers.

Continued high stages in the Illinois and Wabash Rivers were properly forecast and were attended by no material damage.

The Tallahatchie River flood, which still persists, will be reported upon when it subsides.

The usual table of crest stages follows:

[All dates in March unless otherwise specified]

River and station	Flood stage	Above flood stages—dates		Crest	
		From—	To—	Stage	Date
ATLANTIC DRAINAGE					
	Feet			*Feet*	
James: Columbia, Va	18	8	9	19.0	8
Roanoke: Randolph, Va	21	9	9	21.5	9
Santee:					
Rimini, S. C	12	(1)	5	13.3	Feb. 23
		11	16	12.6	13
		22	25	12.8	25
Ferguson, S. C	12	(1)	3	12.6	Feb. 24
		9	19	12.9	14
		23	27	12.4	25
Saluda: Pelzer, S. C	7	8	8	7.0	8
Altamaha: Everett City, Ga	10	20	(2)	10.4	24–25
Ocmulgee: Abbeville, Ga	11	15	16	11.3	15
EAST GULF DRAINAGE					
	Feet			*Feet*	
Alabama: Selma, Ala	35	11	13	35.8	12
Coosa:					
Gadsden, Ala	22	9	12	23.2	9
Lock No. 4, Lincoln, Ala	17	7	13	19.7	8
Etowah: Canton, Ga	11	7	8	18.2	7
Cahaba: Centerville, Ala	25	7	8	26.5	7
Tombigbee: Lock No. 4, Demopolis, Ala	39	9	19	49.7	15
Black Warrior: Lock No. 10, Tuscaloosa, Ala	46	7	10	58.5	8
West Pearl: Pearl River, La	13	6	8	13.4	7
GREAT LAKES DRAINAGE					
Saginaw: Saginaw, Mich	19	(1)	2	20.7	Feb. 27
Flint: Flint, Mich	11	(1)	1	12.8	Feb. 25
Grand:					
Eaton Rapids, Mich	5	(1)	2	5.4	Feb. 22
Grand Rapids, Mich	11	(1)	3	13.3	Feb. 28
MISSISSIPPI DRAINAGE					
Tuscarawas: Coshocton, Ohio	8	(1)	1	12.0	Feb. 27
Hocking: Athens, Ohio	17	9	9	17.5	9
Wabash:					
Covington, Ind	16	(1)	2	18.9	1
Terre Haute, Ind	16	(1)	2	16.4	1–2
Vincennes, Ind	14	2	6	14.8	5
Mt. Carmel, Ill	16	(1)	7	19.8	5
Tippecanoe, Norway, Ind	6	(1)	2	6.5	Feb. 24 and Mar. 2
White: Decker, Ind	18	4	5	18.3	4–5
White, West Fork:					
Elliston, Ind	19	(1)	2	22.1	Feb. 28
Edwardsport, Ind	15	(1)	4	17.8	2
Elk: Fayetteville, Tenn	14	7	9	18.0	7
Illinois:					
Peru, Ill	14	(1)	17	18.4	Feb. 27
Henry, Ill	10	(1)	13	12.6	2
Peoria, Ill	18	(1)	9	19.3	2–3
Havana, Ill	14	(1)	21	16.5	4–5
Beardstown, Ill	14	(1)	23	18.0	5–6
Pearl, Ill	12	(1)	16	14.4	6–7
Meramec:					
Pacific, Mo	11	(1)	(3)	14.9	Feb. 28
		9	10	12.3	9
Valley Park, Mo	14	(1)	1	15.6	Feb. 27
St. Francis:					
Fisk, Mo	20	(1)	1	22.5	Feb. 28
St. Francis, Ark	18	4	5	18.2	5
Missouri: Wolf Point, Mont	17	30	30	17.7	30
Yellowstone: Miles City, Mont	13	14	14	14.1	14
Arkansas: Yancopin, Ark	29	(1)	4	35.0	Jan. 27–30
Black: Corning, Ark	11	(1)	16	12.0	4–5
Tallahatchie: Swan Lake, Miss	25	(1)	(2)	31.9	Jan. 27–29

[1] Continued from last month.
[2] Continued at end of month.
[3] Below flood stage at 8 a. m., Mar. 1.

EFFECT OF WEATHER ON CROPS AND FARMING OPERATIONS, MARCH, 1930

By J. B. KINCER

General summary.—During the first decade the generally mild conditions, with much sunshine, in the central valleys and West, made a favorable period, although there were some unfavorably heavy rains in the Southeast; the additional moisture was beneficial in some parts of this section. Cold weather caused some harm to tender truck in east Gulf States, with considerable injury indicated in Florida. Winter grains continued to make satisfactory advance in the principal producing sections, except for too much moisture in parts of the Ohio Valley and continued dryness in the Southwest. Preparations for corn planting made good progress, with considerable put in throughout the Gulf section and seeding became well advanced in eastern Texas. Rains interfered with work in the eastern Cotton Belt, but much land had been prepared, while planting progressed in southern Texas and considerable cotton was up.

During the second decade weather conditions continued largely favorable for agricultural operations, although there was some delay by showers to field work in parts

of the Southeast; seasonal work was well up in general, with corn being planted as far north as southern Oklahoma and central Arkansas. Light to moderate rains were beneficial in Ohio Valley sections and local precipitation was received in the droughty Southwest, but over a considerable area moisture was badly needed. Some snow remained in the northern Spring-Wheat Belt, but considerable plowing and disking were accomplished in the south and a little spring wheat was sown in northwestern Iowa. Conditions were generally favorable in the Cotton Belt and much preparation of the soil for planting was done; seeding continued in Texas. Vegetation advanced rapidly during the week, and fruit trees were showing color northward to the lower Ohio Valley.

During the last decade cold weather retarded the growth of vegetation and slowed up farm work generally. The coolness was especially marked in the central valley States and the South, with considerable harm to tender vegetation and some damage to fruit bloom as far north as parts of the Ohio Valley. Precipitation was beneficial locally in the Southwest, but moisture was still needed over much of the area, especially in Oklahoma and adjoining States. Low temperatures and dry soil were unfavorable for winter wheat in this area, but snows were helpful in the Ohio Valley. Preparations for planting in the Corn Belt were largely inactive due to wetness, coolness, and frozen soil in the northern part, while in the more southern sections little work was done. Very little cotton was put in during the period; preparation of seed beds had been retarded, but this work was generally well up. Progress of cotton was poor in Texas and much seed lost, due to unfavorable weather for germination.

Small grains.—During the first decade there were still reports of unfavorable freezing and thawing in the Ohio Valley and condition of winter wheat varied widely there. Mostly satisfactory advance was made in the western portions of the belt, except that rain would have helped in Kansas and other parts of the Southwest. Favorable conditions continued in the South and East. Plowing and spring oat sowing had advanced to the Ohio Valley. During the second decade condition of winter wheat continued to vary widely in the Ohio Valley and but little change was noted in the more western parts of the belt; moisture was locally beneficial in Kansas, with but little damage noted from soil blowing. The general condition of the crop remained largely unchanged in most of the South, East, and Northwest. Plowing and disking for oats progressed northward to South Dakota, with oats put in as far north as southern Iowa and Nebraska and a little spring wheat seeded locally in Iowa and southern South Dakota. During the last decade winter wheat was benefited by snow in the western Ohio Valley and the crop was holding up well. In the central and southwestern parts of the belt precipitation was badly needed, with marked deterioration appearing in south-central and western Kansas. Winter cereal crops did well in the East, but in the Northwest a need of moisture was again apparent. Some oats were put in during the period, but spring wheat seeding was retarded by frozen ground in places. Oats made only slow growth in the Southeast and the soil was generally too dry and cold for proper germination of seed.

Miscellaneous crops.—Pastures and meadows greened up rapidly in the East during the first two decades, but the cold weather the latter part of the month generally stopped growth. In the great western grazing sections conditions were mostly favorable, with feeding light throughout and the range furnishing some feed. Generous to heavy rains in parts of the far Southwest were highly beneficial. Some slight shrinkage occurred toward the close of the month, but livestock were favored generally, with lambing proceeding satisfactorily.

There was some frost damage to tender varieties of truck during the first and last decades, especially in the Florida Peninsula early in the month, when local injury occurred south to the Miami district. Gardens and truck did well in most sections, however, with the warmth during the middle period especially favorable in helping overcome the effects of the frosts. Some slight injury to fruit trees and bloom was reported during the cold weather, but favorable retardation was reported from many parts.

WEATHER OF THE ATLANTIC AND PACIFIC OCEANS

NORTH ATLANTIC OCEAN

By F. A. YOUNG

The most unusual feature of the weather over the North Atlantic during March was the unequal distribution of gales, as the number of days in which they occurred was very much below the normal over the northern section, and equal to or above over the southern. Up to time of writing gales have not been reported on more than 1 day in any 5° square north of the fiftieth parallel, while between the thirtieth and thirty-fifth parallels and twentieth to sixtieth meridians they occurred on from 2 to 6 days, the maximum being in the square immediately north of the Azores.

As shown in Table 1, the average monthly pressure at stations on the American coast north of Hatteras was considerably below normal, while on the British Isles the negative departures were comparatively small.

Fog was observed in different localities as follows: Over the Grand Banks, from 9 to 14 days; along the American coast between Hatteras and Nova Scotia, from 6 to 8 days; in the Gulf of Mexico, from 1 to 3 days; in the vicinity of the Azores, from 1 to 2 days; and on not more than 1 day in any 5° square east of the thirty-fifth meridian.

TABLE 1.—*Averages, departures, and extremes of atmospheric pressure at sea level, 8 a. m. (seventy-fifth meridian). North Atlantic Ocean, March, 1930*

Stations	Average pressure	Departure	Highest	Date	Lowest	Date
	Inches	*Inch*	*Inches*		*Inches*	
Julianehaab, Greenland	29.82	(1)	30.32	15th	29.36	11th.
Belle Isle, Newfoundland	29.66	−[2] 0.14	30.34	8th	28.84	21st.
Halifax, Nova Scotia	29.69	−[3] 0.27	30.36	1st	28.94	3d.
Nantucket	29.78	−[3] 0.24	30.34	15th	29.28	19th.
Hatteras	29.92	−[3] 0.18	30.32	15th	29.24	8th.
Key West	29.99	−[3] 0.09	30.18	27th	29.76	8th.
New Orleans	30.04	−[3] 0.05	30.44	3d	29.52	7th.
Cape Gracias, Nicaragua	29.92	−[2] 0.06	29.98	1st [4]	29.82	7th.[4]
Turks Island	30.07	+[2] 0.05	30.24	1st	29.96	16th.
Bermuda	29.99	−[3] 0.15	30.24	1st	29.70	9th.
Horta, Azores	30.04	−[2] 0.08	30.58	11th	29.46	20th.
Lerwick, Shetland Islands	29.67	−[2] 0.03	30.50	1st	29.06	29th.
Valencia, Ireland	29.82	−[2] 0.08	30.50	1st	29.08	15th.
London	29.87	−[2] 0.09	30.50	5th	29.17	16th.

[1] No normal available.
[2] From normals shown on Hydrographic Office Pilot Charts, based on observations at Greenwich mean noon, or 7 a. m., seventy-fifth meridian time.
[3] From normals based on 8 a. m. observations.
[4] And on other date or dates.